

providing a semiconductor membrane having an insulating substrate attached on a first side of said semiconductor membrane;

attaching a metallic interlayer to a second side of said semiconductor membrane;

attaching a thermally conducting substrate to said metallic interlayer ;

removing said insulating substrate from said first side of said semiconductor membrane; and

placing a metal layer on said first side of said semiconductor membrane.

3. The method of Claim 1 wherein the metallic interlayer is a solder layer, the operation.

5. The method of Claim 1 wherein the operation of removing said insulating substrate includes exposing said insulating substrate to laser light.

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6. The method of Claim 5 wherein the operation of removing said insulating substrate includes polishing a surface of said insulating substrate prior to exposure to laser light of said surface.

9. A method for making a nitride laser diode array comprising the operations of:

providing a semiconductor membrane having a first crystal plane, said semiconductor membrane having an insulating substrate attached to a first side of said semiconductor membrane and having a plurality of metal electrodes attached to a second side of said semiconductor membrane;

attaching a thermally conducting substrate having a second crystal plane to said first side of said semiconductor membrane such that said first and said second crystal planes are aligned;

removing said insulating substrate from said first side of said semiconductor membrane; and

placing a metal layer on said first side of said semiconductor membrane.

10. The method of Claim <sup>9</sup>~~8~~ further comprising the operation of:

cleaving said thermally conducting substrate along said second crystal plane and cleaving said semiconductor membrane along said first crystal plane to make facets in said laser diode array.

13. A method for making a nitride laser diode array comprising the operations of:

providing a semiconductor membrane having a first crystal plane, said semiconductor membrane having an insulating substrate attached to a first side of said semiconductor membrane and having a plurality of metal electrodes attached to a second side of said semiconductor membrane;

attaching a thermally conducting substrate having a second crystal plane to said first side of said semiconductor membrane such that said first and said second crystal planes are aligned;

removing said insulating substrate from said first side of said semiconductor membrane;

placing a metal layer on said first side of said semiconductor membrane; and

etching a trench through said metal layer and said semiconductor membrane, said trench dividing said metal layer and said semiconductor membrane into two separate sections.